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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/935,844	09/23/1997	ROBERT WILSON	E0295.70021US00	9098
46630 7590 07/23/2009 EMC Corporation c/o WOLF, GREENFIELD & SACKS, P.C. 600 ATLANTIC AVENUE BOSTON, MA 02210-2206				
EXAMINER				
DILLER, JESSE DAVID				
ART UNIT		PAPER NUMBER		
2187				
MAIL DATE		DELIVERY MODE		
07/23/2009		PAPER		

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* ROBERT WILSON, DENNIS P.J. TING,  
and MEHAMOOD HOSEIN

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Appeal 2008-004759  
Application 08/935,844  
Technology Center 2100

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Decided: July 23, 2009<sup>1</sup>

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Before JOHN C. MARTIN, LANCE LEONARD BARRY, and  
JEAN R. HOMERE, *Administrative Patent Judges*.

BARRY, *Administrative Patent Judge*.

DECISION ON APPEAL

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<sup>1</sup> The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

## STATEMENT OF THE CASE

The Patent Examiner rejected claims 1-32, 34-60, 62, 63, and 65-67. The Appellants appeal therefrom under 35 U.S.C. § 134(a). We have jurisdiction under 35 U.S.C. § 6(b).

## INVENTION

The invention at issue on appeal employs a pre-existing and inexpensive data communication link to connect two remotely disposed storage systems in a remote mirroring data facility. (Spec. 7.)

## ILLUSTRATIVE CLAIM

22. A computer system comprising:
- a central processing unit (CPU);
  - a first storage system that is coupled to the CPU to store information written from the CPU;
  - a second storage system;
  - at least one communication link coupling the second storage system to the CPU, the at least one communication link including at least one wireless connection, wherein the at least one communication link extends between the first and second storage systems such that the second storage system is coupled to the CPU via the first storage system; and
  - a mirroring controller, responsive to the information being written from the CPU to the first storage system, to mirror at least some of the information written from the CPU to the first storage

system in the second storage system by transferring the at least some of the information over the at least one communication link.

PRIOR ART

Sparks	5,212,784	May 18, 1993
Staheli	5,537,533	Jul. 16, 1996
Yanai	5,544,347	Aug. 6, 1996
Ohran	5,835,953	Nov. 10, 1998
Vishlitzky	5,960,216	Sep. 28, 1999
Zarrow	5,991,813	Nov. 23, 1999

Uyless D. Black, *Computer Networks: Protocols, Standards and Interfaces*, 159-161 (Prentice-Hall 2nd ed., 1993) (hereinafter "Black").

REJECTIONS

Claims 1-3, 5, 10-12, 18, 19, 39-41, 46-49, 51, and 52 stand rejected under 35 U.S.C. § 103(a) over Zarrow and Yanai.

Claims 4 and 17 stand rejected under 35 U.S.C. § 103(a) over Zarrow, Yanai and Black.

Claims 6-8, 15, 16, 20, 21, 42-44, 50, 62, 63, and 65-67 stand rejected under 35 U.S.C. § 103(a) over Zarrow, Yanai, and Vishlitzky.

Claims 9, 13, 14, and 45 stand rejected under 35 U.S.C. § 103(a) over Zarrow, Yanai, and Sparks.

Claims 22-32, 35-38, and 53-55 stand rejected under 35 U.S.C. § 103(a) over Zarrow, Sparks, and Yanai.

Claim 34 stands rejected under 35 U.S.C. § 103(a) over Zarrow, Sparks, and Black.

Claims 56-58 stand rejected under 35 U.S.C. § 103(a) over Zarrow, Staheli, and Yanai.

Claims 59 and 60 stand rejected under 35 U.S.C. § 103(a) over Zarrow, Black, and Yanai.

CLAIMS 1-21, 23, 31-52, 56-58, 62, 63, AND 65-67

The Examiner makes the following findings.

Zarrow discloses . . . at least one communication link coupling the second storage system to the CPU, the at least one communication link including a network cloud (WAN) that is shared with at least one other resource so that no portion of the network cloud is dedicated exclusively to transferring information between the CPU and the second storage system (Figure 1, Reference 14, C 2, L 1-3) . . . . Zarrow does not explicitly disclose the communication link extending between the first and second storage systems such that the second system is coupled to the CPU via the first storage system. However, Yanai does teach this feature (Figure 1, Reference 40; C 4, L 50-56).

(Answer 3-4.) She concludes that "one of ordinary skill in the art would have been motivated to add the teachings of Yanai to the teachings of Zarrow (remote mirroring over a WAN)." (*Id.* at 4.) The Appellants argue that "the Examiner picks and chooses various features of Zarrow and Yanai

in an attempt to reconstruct Appellants' claims in hindsight." (Appeal Br. 15.)

#### ISSUE

Therefore, the issue before us is whether the Appellants have shown error in the Examiner's conclusion that the combined teachings of Zarrow and Yanai would have suggested a communication link including a network cloud extending between first and second storage systems as in claims 1-21, 23, 31-52, 62, 63, and 65-57 or a communication link selected from the group consisting of an intranet or the Internet as in claims 56-58.

#### LAW

"Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor." *Para-Ordnance Mfg. v. SGS Importers Int'l*, 73 F.3d 1085, 1087 (Fed. Cir. 1995) (citing *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1551, 1553, (Fed. Cir. 1983)). "It is impermissible to use the claimed invention as an instruction manual or 'template' to piece together the teachings of the prior art so that the claimed invention is rendered obvious." *In re Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992) (citing *In re Gorman*, 933 F.2d 982, 987 (Fed. Cir. 1991)).

#### FINDINGS OF FACT ("FFs")

1. Zarrow's "system includes a local computer indicated generally at 10, and a remote computer indicated generally at 12, connected over a network 14." (Col. 2, ll. 52-55.) "The local computer 10 is attached to a local storage device 16, such as a disk drive or tape device. Similarly, the

remote computer 12 is attached to a remote storage device 18." (*Id.* ll. 55-58.)

2. The Examiner admits that "Zarrow does not explicitly disclose [its] communication link extending between the first and second storage systems." (Answer 4, 13.)

3. Yanai's "primary data storage system controller 16 . . . features at least a second disk adapter 36." (Col. 4, ll. 50-52.) "The at least second disk adapter 36 is coupled, via a high speed communication link 40 to disk adapter 42 on a secondary data storage system controller 44 of a secondary data storage system 46." (*Id.* ll. 53-56.) "Such high speed, point-to-point communication links between the primary and secondary data processing system controllers 16 and 44 include a fiber optic link driven by an LED driver, per IBM ESCON standard; a fiber optic link driven by a laser driver, and optionally T1 and T3 telecommunication links." (*Id.* ll. 56-62.)

#### ANALYSIS

The Examiner admits that Zarrow's network does not extend between its local and remote storage systems. (FF 2.) Instead, the network extends between Zarrow's local and remote computers. (FF 1.)

Yanai features a communication link extending between its primary and secondary storage systems. (FF 3.) The link, however, does not include a network cloud. Instead, the link is a high speed, point-to-point communication link such as a fiber optic link driven by an LED driver

according to the IBM ESCON standard; a fiber optic link driven by a laser driver; and optionally T1 and T3 telecommunication links. (*Id.*)

We agree with the Appellants that "[t]o reconstruct [their] claims" (Appeal Br. 15), the Examiner "'chooses' the feature of Yanai wherein mirroring communication is performed directly between the storage systems" (*id.*) and chooses to exclude the same reference's use of a high speed, point-to-point communication link to connect the storage systems and enable the mirroring. Rather than being based on teachings of or knowledge in the prior art, these choices appear to be based solely on the teachings or suggestions of the Appellants. The choices amount to an impermissible use of the claimed invention as a template to piece together the teachings of the prior art so that the claimed invention is rendered obvious.

#### CONCLUSION

Based on the aforementioned facts and analysis, we conclude that the Appellants have shown error in the Examiner's conclusion that the combined teachings of Zarrow and Yanai would have suggested a communication link including a network cloud extending between first and second storage systems as in claims 1-21, 23, 31-52, 62, 63, and 65-57 or a communication link selected from the group consisting of an intranet or the Internet as in claims 56-58.

#### CLAIMS 22, 24-30, AND 53-55

The Examiner concludes that "it would have been obvious to one of ordinary skill in the art to use a wireless connection in the system taught by



Zarrow and Yanai for increased reliability and increased throughput." (Answer 7.) The Appellants argue that "there is simply nothing in the backup system of Sparks which would have suggested to one of ordinary skill in the art to modify the application-specific system of Yanai to replace the communication link disclosed therein with a wireless connection in a mirroring (not a backup) system." (Appeal Br. 25.)

#### ISSUE

Therefore, the issue before us is whether the Appellants have shown error in the Examiner's reason for substituting a wireless link for or employing a wireless link in Yanai's communication link as in claims 22, 24-30, and 53-55.

#### LAW

"[W]hen a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result" to be nonobvious. *KSR Int'l v. Teleflex Inc.*, 550 U.S. 398, 416 (2007) (citing *United States v. Adams*, 383 U.S. 39, 50-51 (1966)).

[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. . . . [A] court must ask whether the improvement is more than the predictable use of prior-art elements according to their established functions."

*Id.* at 417.

#### FINDINGS OF FACT

4. The Examiner finds that it was "well known that wireless connections such as satellites provide a large transmission capacity and improve reliability due to the lack of wires." (Answer 7.)

5. Sparks teaches that "[f]or a computer system having mirrored or shadowed primary data storage devices, it would be desirable to provide a means and method that could copy a primary data storage device to a backup data storage device." (Col. 1, ll. 51-54.)

6. The latter reference also discloses a "backup device 6 can be placed in a secure environment, with data transmitted to it via long-distance wired connection (e.g., a local area network, modem telecommunications, or transmission lines) or a wireless communication system." (Col. 7, ll. 28-32.)

#### ANALYSIS

As mentioned above, Yanai features a high speed, point-to-point communication link extending between its mirrored storage systems. (FF 3.) The link, however, is not disclosed as being wireless.

For its part, Sparks teaches the equivalence of wired and wireless connections (FF 6) to back up data in a mirrored storage system. (FF 5.). Because the latter reference relates to the backup of data in a mirrored storage system (*id.*), we find that its teaching of equivalence would have been applicable to Yanai's mirrored storage systems. We agree with the Examiner's conclusion that one of ordinary skill in the art would have

substituted a wireless communication link for the wired communication link process of Yanai, moreover, and further find that the results of the substitution would have been predictable.

Regardless of the applicability of Spark's teachings, the Examiner finds that the use of wireless connections to provide a large transmission capacity and improve reliability due to the lack of wires (FF 4) was well known in the art. "Silence implies assent." *Harper & Row Publishers, Inc. v. Nation Enters.*, 471 U.S. 539, 572 (1985). Here, the Appellants' failure to contest the Examiner's finding implies their assent thereto. We agree with the Examiner's finding that the benefits of a large transmission capacity and improved reliability would have motivated one of ordinary skill in the art to employ a wireless connection in Yanai's communication link, moreover, and further find that the results of the substitution would have been predictable.

#### CONCLUSION

Based on the aforementioned facts and analysis, we conclude that the Appellants have shown no error in the Examiner's reason for substituting a wireless link for or employing a wireless link in Yanai's communication link as in claims 22, 24-30, and 53-55.

#### CLAIMS 59 AND 60

The Examiner finds that the combined teachings of Zarrow, Yanai, and Black would have suggested substituting a packet switched network for Yanai's communication link. (Answer 13-15.) The Appellants argue that "the combination of Zarrow and Yanai fails to teach a computer system

having a communication link extending between first and second storage systems and including a network. Black does not solve this deficiency in the two primary references, as Black is only relied upon for teaching particular types of networks." (Appeal Br. 28.)

#### ISSUE

Therefore, the issue before us is whether the Appellants have shown error in the Examiner's conclusion that the combined teachings of Zarrow, Yanai, and Black would have suggested a packet switched network extending between first and second storage systems as in claims 59 and 60.

#### FINDINGS OF FACT

7. Black (p. 160) explains that "if an organization has 'bursty' traffic conditions, a private packet network usually provides better and more economical service than . . . dedicated facilities."

#### ANALYSIS

As mentioned above, Yanai features a high speed, point-to-point communication link extending between its mirrored storage systems. (FF 3.) For its part, Black teaches that a private packet network usually provides better and more economical service than dedicated facilities for an organization that has "bursty" traffic conditions. We find that writes to data storage systems and subsequent mirroring thereto constitute bursty traffic conditions. We further find that the benefits of better and more economical service would have suggested substituting a private packet network for Yanai's communication link.

#### CONCLUSION

Based on the aforementioned facts and analysis, we conclude that the Appellants have shown no error in the Examiner's conclusion that the combined teachings of Zarrow, Yanai, and Black would have suggested a packet switched network extending between first and second storage systems as in claims 59 and 60.

#### DECISION

We reverse the rejections of claims 1-21, 23, 31-52, 56-58, 62, 63, and 65-67 but affirm the rejections of claims 22, 24-30, 53-55, 59, and 60.

No time for taking any action connected with this appeal may be extended under 37 C.F.R. § 1.136(a)(1). *See* 37 C.F.R. § 1.136(a)(1)(v).

#### AFFIRMED-IN-PART

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